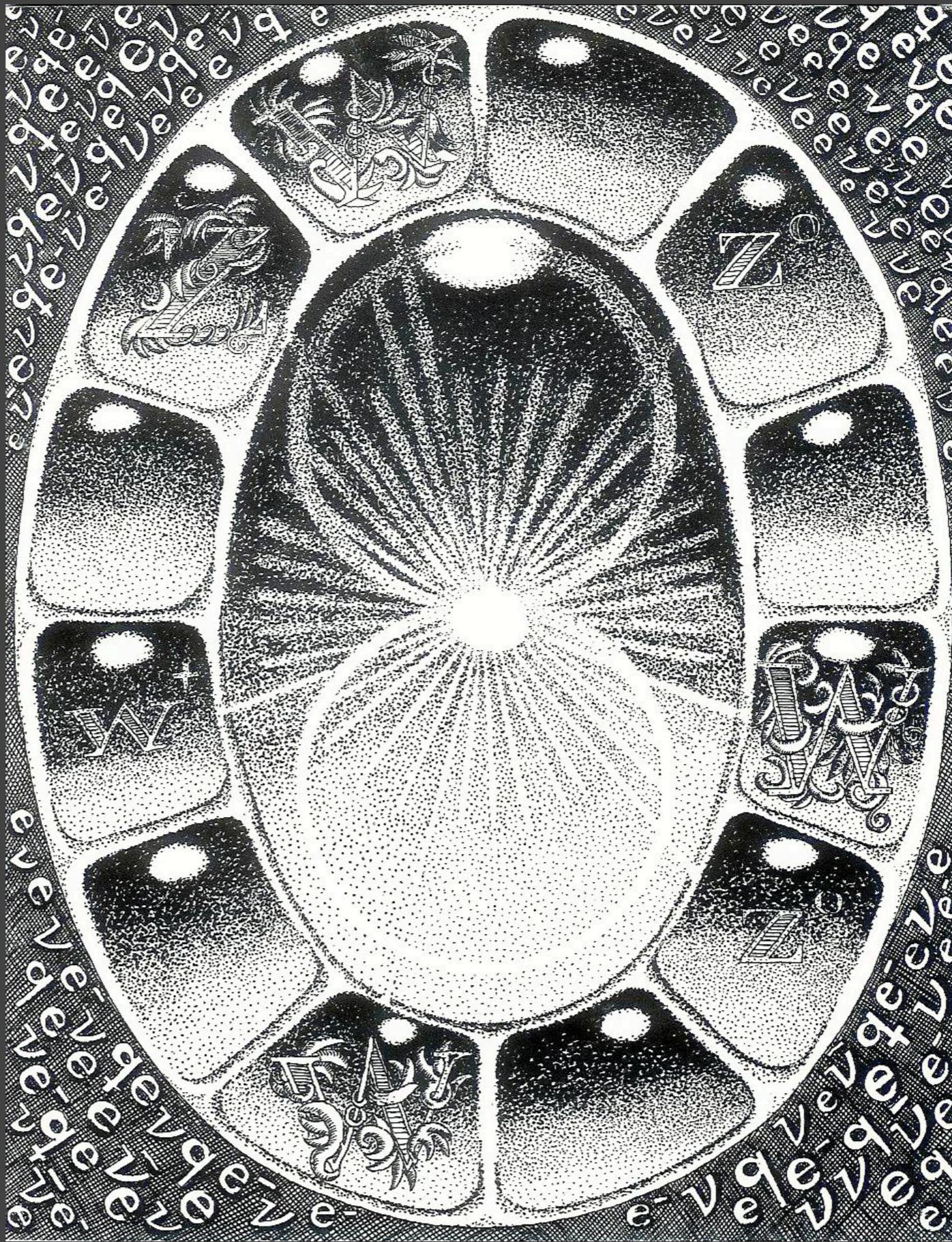


Theory for the Tevatron Collider:

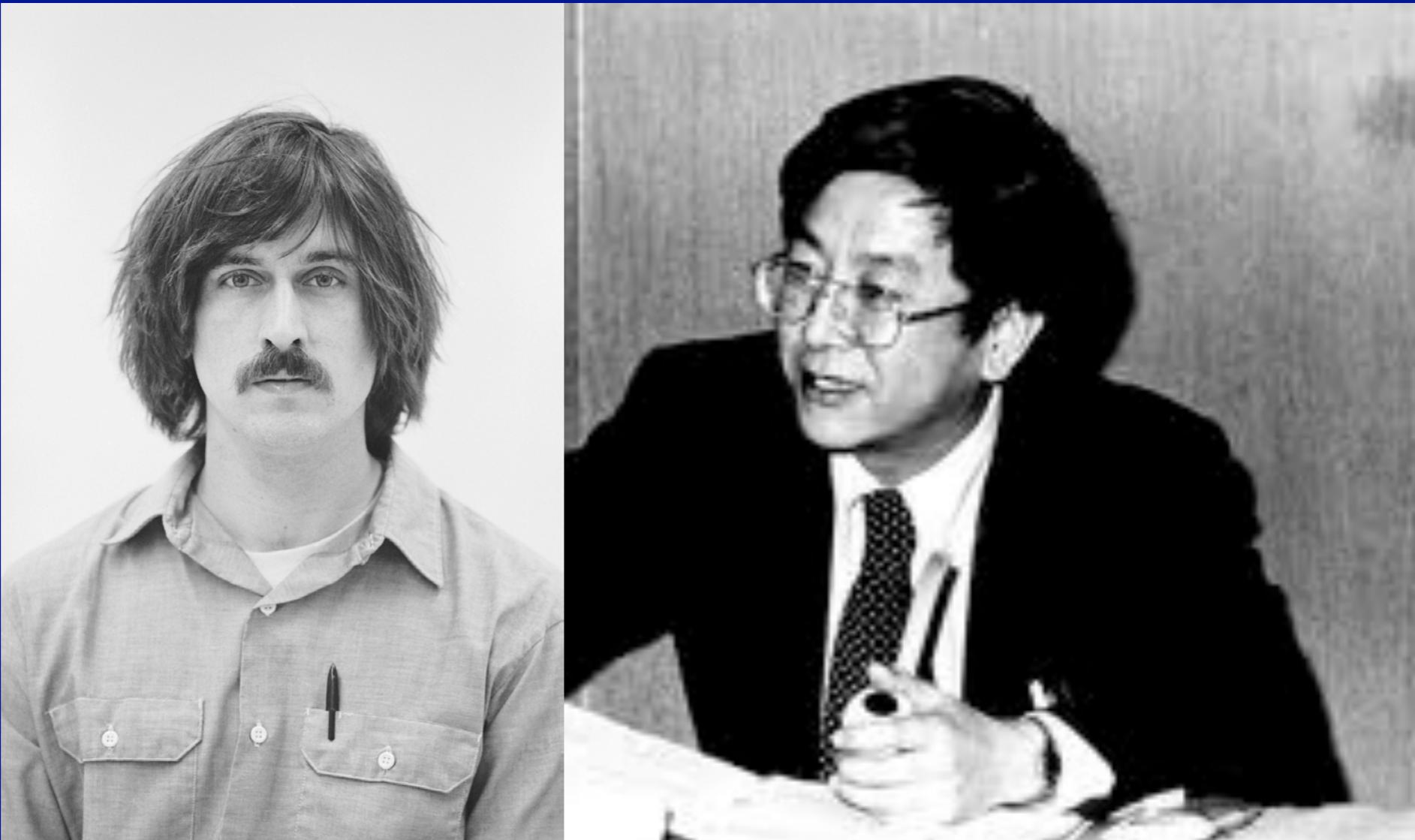
The First 25⁺ Years

Which Collider to Build? (1976)



Angela Gonzales

$$M_H \leq (8\pi\sqrt{2}/3G_F)^{1/2} \approx 1 \text{ TeV (1977)}$$



QCD Beyond Leading Order (1978)



Supersymmetry (1984)



SUSY Meets ISAJET (1984)



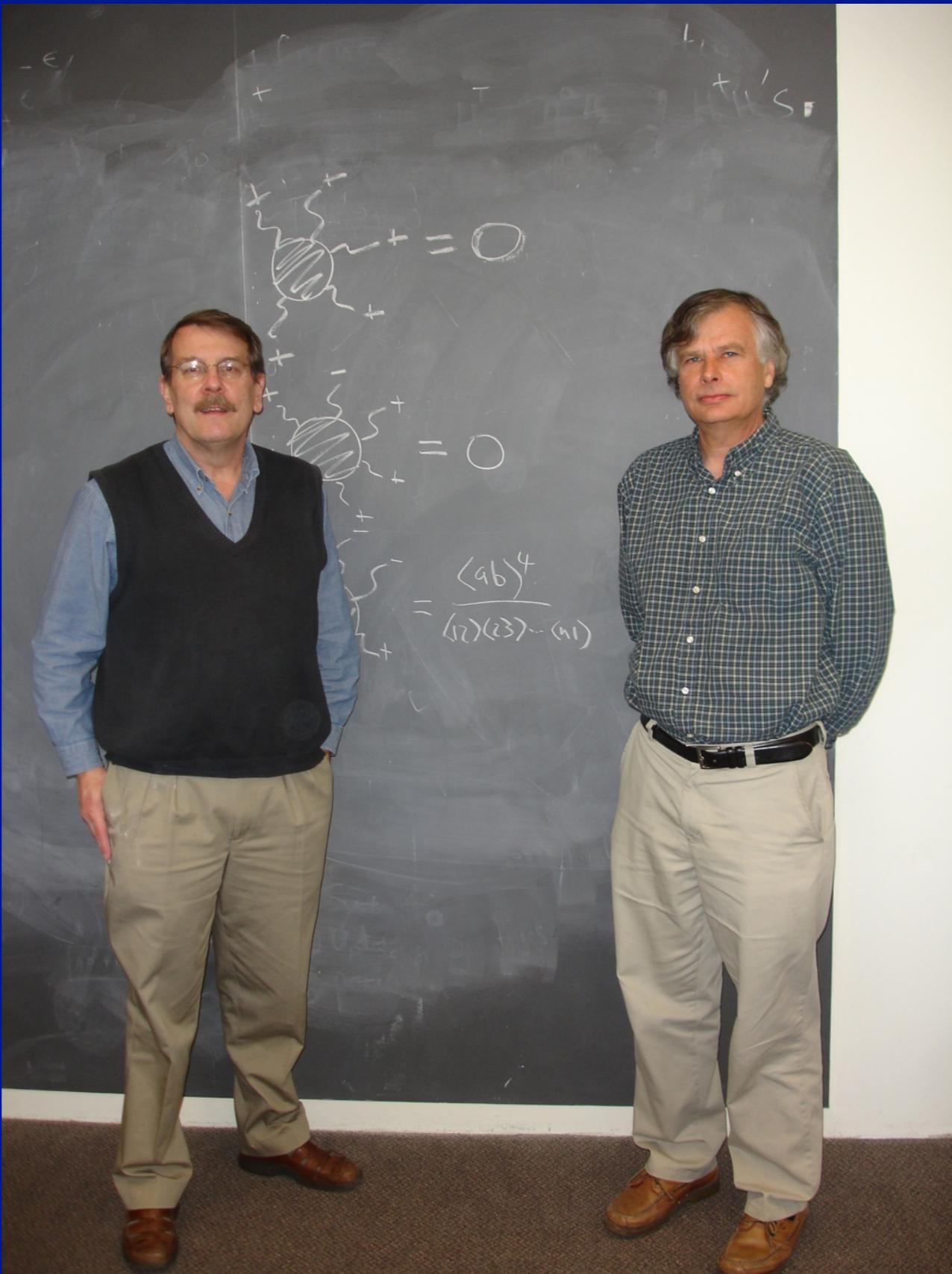
SUSY Meets ISAJET (1984)



Supercollider Physics (1984)



Amplitude for n -Gluon Scattering (1986)



Amplitude for n -Gluon Scattering (2004)



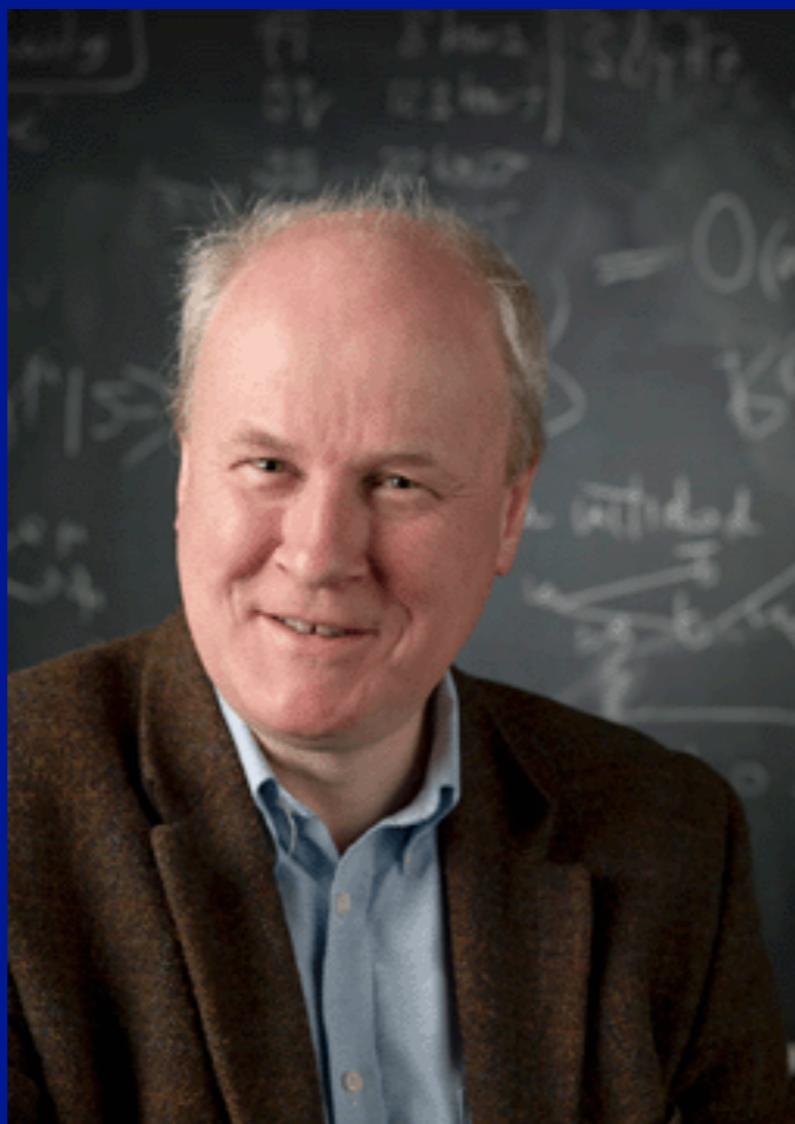
VECBOS: $(W,Z) +$ jets at LO (1991)



Special Role for Top? (1989-1992)



Heavy Quarks @ NLO (1988)



Gluon Amplitudes @ I-loop (2006)



Physics at Run II (1999-2002)



SUSY/Higgs, Top Quark, New Strong Dynamics,
QCD & Weak Bosons, B physics, Monte Carlo Generators

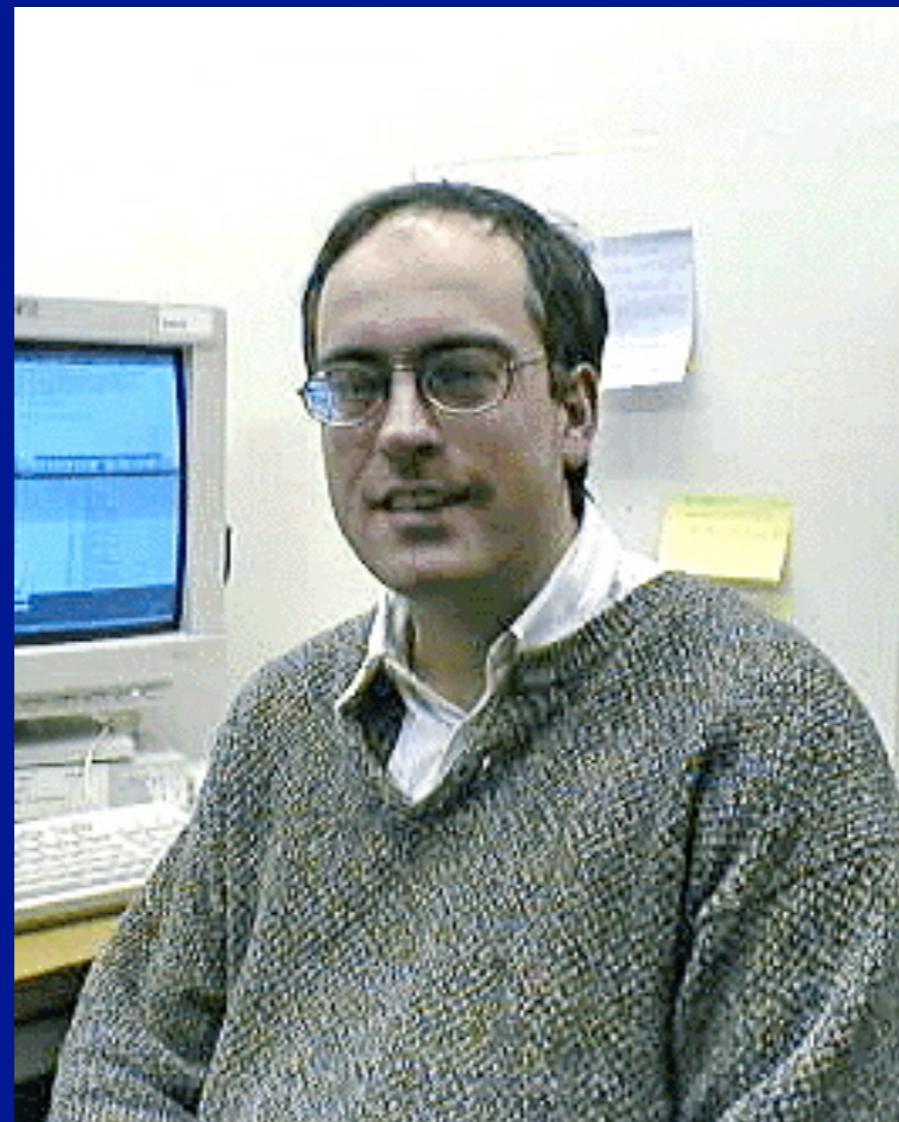
Frontier Fellows / Ben Lee Fellows (since 1998)

Tom Appelquist, Vernon Barger, Howie Haber,
Stuart Raby, Steve Ellis, Wu-ki Tung,
Moshe Moshe, Pierre Ramond, Stefan Pokorski,
Mariano Quirós, JoAnne Hewett, Alexei Smirnov,
Steve Gottlieb, Ken Lane, Uli Baur,
Eric Braaten, Scott Willenbrock, Aïda El-Khadra,
Tao Han, Edward Boos, Paul Langacker,
Frank Petriello, Gustavo Burdman, Graham Kribs

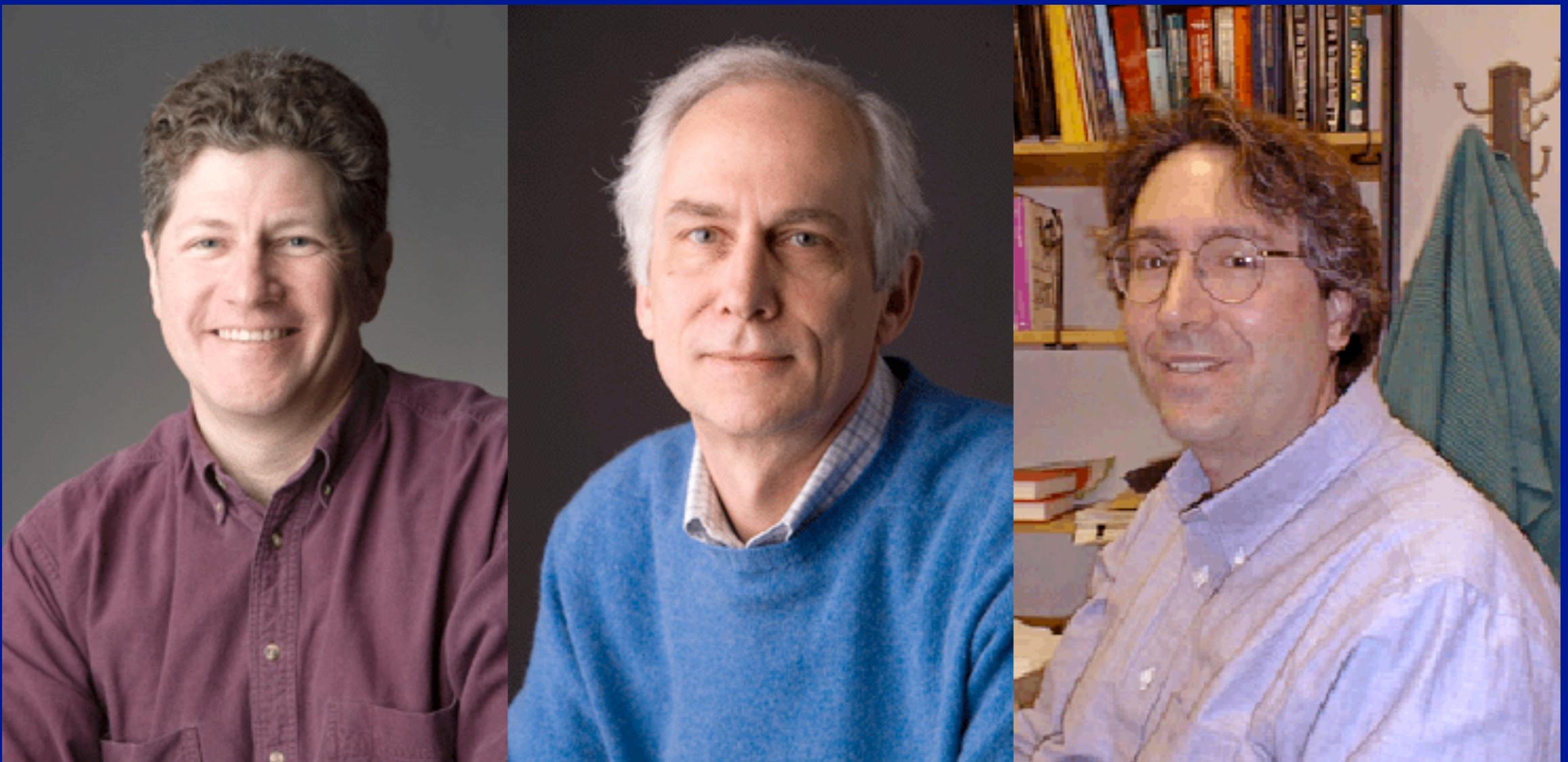
Extra Spacetime Dimensions (1996-2001)



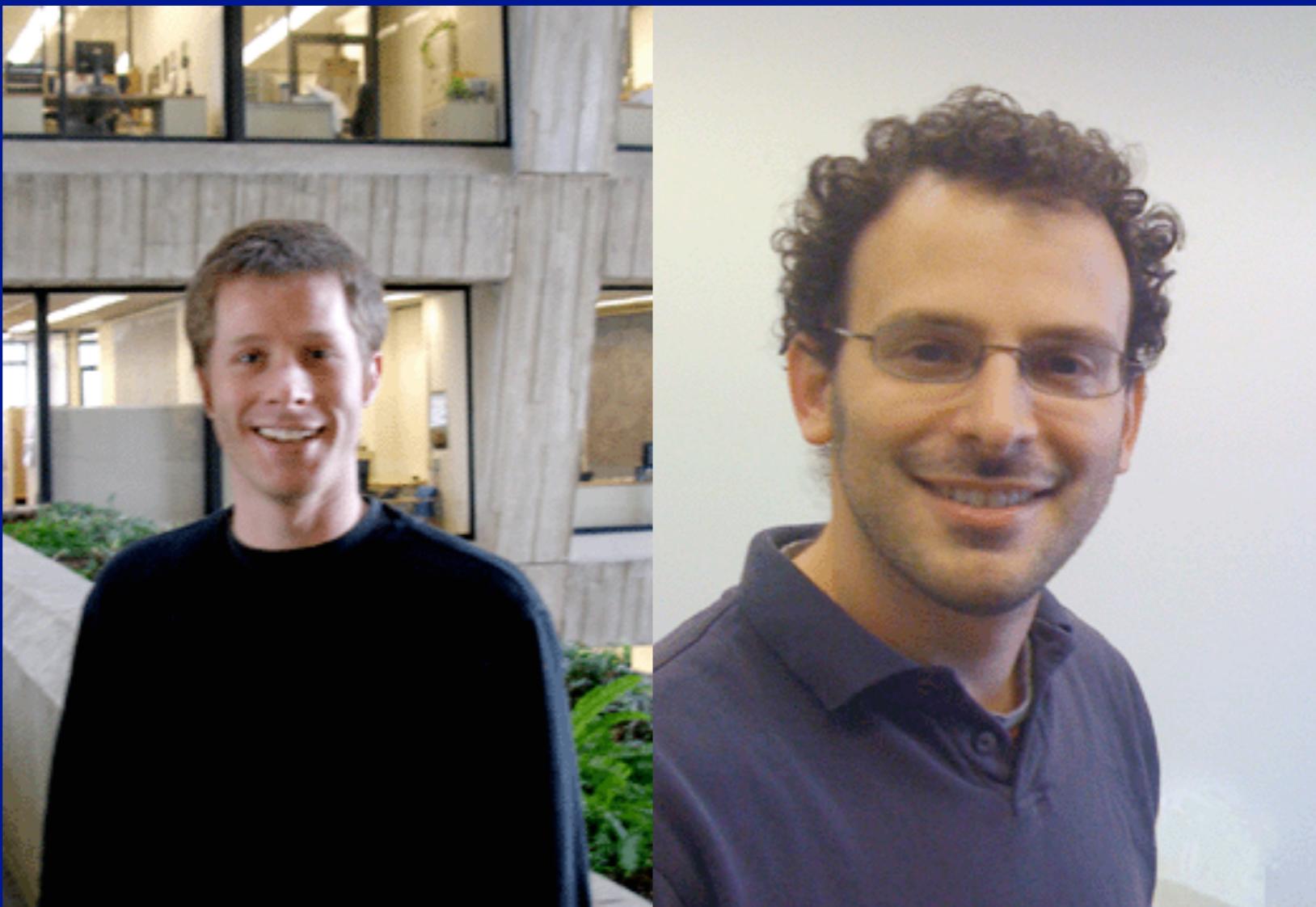
Chicago Flavor Seminar (2002-2009)



B_c Mass (2005)



Dark Matter Constraints (2010)



And for the next 25 years ...

Multiple anomalies in top-quark physics: FB asymmetry, resonances, anomalous spin correlations ... 4b final state with two bb resonances ... quirks (di-jet plus anomalously busy underlying events), monojets (direct production of dark matter pairs plus a jet), Techni-rhos ... 200-GeV Higgs boson ... low-scale new physics: an $O(10 \text{ GeV})$ particle ... anomalous CP asymmetries in neutral-B mixing ... observe $B_s \rightarrow \mu\mu$... confirm like-sign dimuon charge asymmetry in B_s decays ... 4-th generation quark ... nonstandard Higgs boson ... Top-quark mass with a shelf life of a decade ... Constrain $\tan\beta < 10$... Warped extra dimensions ... Virtual effects of new physics found at the LHC ... R-parity-violating decays of superpartners ... Light bb resonances ... Many different Higgs bosons ... CP violation in D^0 decays ... Spin-2 production or exchange ... Confirm bump in the **III** channel at **III** GeV ... FCNC in top decays ... Observe excess-MET events ... Extend B_c spectrum ... Reveal all zoo events ... Establish $Z^+(4430)$...

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Postdocs propose tuning search strategy for $\bar{p}p \rightarrow \$\$ + (N\$) + \text{jobs}$ @ large N

